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A NEW REVIEW OF SYSTEMATICS OF SPIRURATA (NEMATODA) PARASITIC IN FISHES

K.I.Skryabin

In 1928 Travassos, Artigas and Pereira established subfamily Rhabdochoninae to accommodate three genera of fish nematodes: Rhabdochona Railliet, 1916, Cystidicola Fischer, 1798 and Spinitectus Fourment, 1883, and placed it in the family Spiruridae. According to the classification of Yorke and Maplestone (1926), the genera Rhabdochona and Cystidicola belonged to the family Thelaziidae, and Spinitectus to Rictulariidae.

The diagnostic features of the subfamily Rhabdochoninae are: the presence of pharynx that has the appearance of an elongate, chitinized tube, slightly expanded in its anterior part, two unequally long spicules of different shape (the long one being thin, the short one thick), the absence of gubernaculum, the presence of numerous preanal and postanal papillae, the presence of a bivalved mouth with lips that are either well developed or rudimentary. They are similar biologically, in that they are all parasitic in the digestive tract and the swimbladder of fishes.

Examining morphology of various presentatives of Spirurata described in the literature, I come to the conclusion that the following genera should be considered as being close to Rhabdochoninae: Capillospirura Skryabin, 1924, of sterlet, Metabronema Yorke and Maplestone, 1926, from Trachurus, and Comephoronema Layman, 1933, from a Baykal oil-fish (Comephorus).

Examining and comparing morphological details of each genus in the attempt to find features that could serve as diagnostic clues of different systematic categories, I arrived at the following main conclusions.

1. Subfamily Rhabdochoninae has been validly established and should be retained in the systematics of Spirurata.

2. However, inclusion of Rhabdochoninae in the family Spiruridae, as was done by Travassos, Artigas and Pereira, is unjustified, because the genera comprised in Rhabdoconinae show substantial differences from Spirura Blanchard, 1849 - the type genus of the family Spiruridae.

3. Comparing with one another genera comprised in Spirurata and parasitic in fishes, I arrive at the conclusion that they cannot be included in the same subfamily, Rhabdochoninae. They should be distributed, at the least, among three subfamilies: 1) Rhabdochoninae Travassos, Artigas and Pewreira, 1928; 2) Cystidicolinae nov.subf. and 3) Spinitectinae nov.subf.

4. The main characteristics determining the membership of individual genera in the above subfamilies are: 1) presence or absence of chitinized sculpturing on the surface of the cuticle, and 2) presence or absence of filaments on the poles of mature eggs.

5. Subfamily Rhabdochoninae comprises genera with smooth cuticle and eggs devoid of filaments. Here belong: Rhabdochona Railliet, 1916 and Sterliadochona Skryabin, 1946.

6. Subfamily Cystidicolinae nov.subf. comprises genera with smooth cuticle but with eggs provided with filaments on both poles. Here belong: Cystidicola Fischer, 1798, Capillospirura Skryabin, 1924; Matabronema Yorke and Maplestone, 1926, Comephoronema Layman, 1933, and Pseudocystidicola

Layman, 1933. I elevate Pseudocystidicola to the rank of an independent genus, although Layman erroneously considers it a subgenus of Cystidicola, with which it is neither morphologically nor ecologically connected.

7. Subfamily Spinitectinae nov.subf., comprising only one genus, Spinitectus Fourment, 1883, is characterised by the presence on the cuticle of transversely arranged chitinized rings, the posterior margin of which is armed with sharp, backward-pointing spinules.

8. All these three subfamilies can be conveniently fitted in the same family, which deserved to be called Rhabdochonidae nov.fam. The main diagnostic features of this family are: thin, delicate body, buccal orifice leading into a funnel-like buccal cavity, a thin, elongate pharynx, presence of cervical papillae, well-developed, bipartite esophagus, unpaired spicules of different sturucture, abundance of postanal papillae and parasitization in fishes.

9. The problem of the systematic affiliation of the genera Ichthyobronema Gnedina and Ssavina, 1930, Haplonema Ward and Magath, 1916 and Cottocomephoronema Layman, 1933 remains unclear.

In having smooth cuticle and being devoid of egg filaments, Ichthyobronema gravitates towards Rhabdochoninae. However, the absence of lips, elongate pharynx and presence of even-length spicules prevents placing of this genus even in the family Rhabdochonidae.

The presence in Cottocomephoronema of a "bulbus" in the region of the border between the oesophagus and the intestine, mentioned by Layman but not studied in detail, makes determination of its systematic position impossible.

Unclear also is the familial affinity of the genus Haplonema Ward and Magath, 1916. The absence of lips, of elongate pharynx, and the presence of even-lenth spicules prevents placing it in the Rhabdochonidae. Neither are there any grounds for leaving this genus in Thelaziidae.

A detailed study of these three spirurid genera parasitic in fishes is an urgent taskj of ichthyological parasitology.